Research

USDA Forest Service Research and Development, U.S. Geological Survey, and the Joint Fire Science Program are the three primary federal organizations that carry out fire-related research and development for use by agency managers, communities, and industry. Colleges and universities and other partners also contribute greatly to wildland fire research. These organizations often leverage and complement each other to accomplish research goals. A Fire Research Coordination Council comprising leaders of major fire research programs guides fire science and technology transfer efforts.

In FY 2004, 72 teams continued work begun in FY 2001 and FY 2002 with National Fire Plan (NFP) funding and support. These teams are delivering products to the user community as well as continuing work on longer term projects. Joint Fire Science Program projects are more narrowly focused and are funded for discrete time periods.

Research and development activities funded through the National Fire Plan and the related Joint Fire Science Program generated products and continued study related to the goals of the NFP. Both Forest Service Research and Development and the Joint Fire Science program produce annual business summaries that fully detail accomplishments. The **National Fire Plan Research and Development 2004 Business Summary** includes a list of accomplishments, some of which are highlighted below:

- Researchers completed flight-testing the newly developed FireMapper thermal-imaging system. FireMapper uses new night-vision technology to measure thermal radiation from both spot fires and intense flaming fronts. Fire managers and researchers use FireMapper to improve fire suppression operations, firefighting safety, and our understanding of the behavior and impacts of wildland fire.
- Research scientists developed a computer model to aid the public in protecting their property from wildfire in wildland/urban interface areas. The model helps evaluate landscaping choices, such as retaining native vegetation, providing privacy, conserving water, and saving energy, while providing options for fire safety.
- Research scientists developed predictive tools to assess effects of fuel and restoration treatments on buildings and structures, fish, wildlife, threatened and endangered species habitat, air quality, carbon sequestration balances and dynamics, water resources and hydrological processes, and invasive species populations. Target audiences include fuels management specialists, resource specialists, National Environmental Policy Act (NEPA) planning team leaders, line officers in the Forest Service and Department of the Interior, community leaders, and educators.
- Research scientists developed a computer model called FERGI to determine where treatments can be useful and where they may not be. The model predicts changes in runoff and erosion given the topography, soils, fire severity, weather, and proposed treatments. This new source of information will help managers understand the costs, benefits, and alternatives of fuels and restoration treatments. A web-based application is in development.

Accomplishments for the JFSP are included in the 2004 Joint Fire Science Program Business Summary, available at **jfsp.nifc.gov**